

Spinach

Grow

Around the World

Spinach originated in Persia and dates back to 7th century China. This leafy green was brought to Europe in the 15th century. Now, spinach is grown across the United States and all over North Carolina. Today, the United States is the second largest producer of spinach in the world.^{1,2}

Meet the Family

Closely related to beets and Swiss chard, spinach is also a member of the “goosefoot” family (named for the shape of its leaves).^{3,4}

Spinach is cool!

Spinach is a cool season vegetable that can be planted in 40-75°F soil. Plant seeds 6 inches apart, ½ inch deep, in the garden from February through March and again in mid-August to mid-October for a fall crop. Spinach prefers full sun, but can grow in partial sun. It grows very quickly, and the leaves will be ready to harvest in 50-60 days.³

Fun Fact: Spinach phytonutrients, lutein and zeaxanthin, help maintain healthy vision.¹⁰

Choose

Different Varieties

There are three main varieties of spinach:

1. A *savory* variety which is rougher in appearance with crinkly leaves and a dark green color.
2. A *semi-savory* variety which has curly leaves and is typically easier to clean than the savory variety.
3. A *smooth leaf* variety which is unwrinkled and milder in taste.

Spinach is available year round from sources around the U.S. Peak harvest in North Carolina is January to May and October to December. Raw spinach leaves should be clean, fresh and crisp with a bright green color on top and dull green underneath.^{1,3}

Fun Fact: California and Arizona are the largest U.S. producers of spinach, followed by Texas and New Jersey.⁴



Fun Fact: In the 1920's, the cartoon character, Popeye the Sailorman, helped make eating spinach popular because of the extra strength he got from eating the vegetable. He was known for singing about how spinach gave him strength.^{3,4}

Store

Spinach can be purchased fresh, frozen or canned. Store raw spinach immediately in a tightly covered container in the coldest part of the refrigerator (32-36°F). Some fruits and vegetables, like apples, pears and tomatoes, produce ethylene gas. Ethylene gas can cause produce to ripen quickly. Store spinach away from ethylene producing fruits and vegetables. If stored properly, spinach should stay fresh for about 10-14 days.^{3,6}

Fun Fact: MyPlate recommends: “Make half your plate fruits and vegetables.” Spinach adds color to your plate with no cholesterol, few calories and little fat or sodium.⁷

Use

Spinach is a versatile leafy green. It can be eaten raw or cooked. Before eating, wash raw spinach well under clean, running water. Fresh spinach is a great addition to a salad, sandwich or even a smoothie. Spinach can also be steamed, microwaved, or sautéed. Add to stir fries, soups, or pizza. To retain nutrients, avoid overcooking.¹

Spinach

Teach

Rainbow on Your Plate or Tray

The Healthy Hunger-Free Kids Act (HHFKA) was passed by Congress and signed into law by the President in 2010. HHFKA includes significant changes to school meals and the school nutrition environment to help provide students with more nutritious food options, educate children about making healthy food choices, and teach children healthy habits that can last a lifetime. School meals now include more nutrient dense foods, like whole grains, fruits and vegetables. Nutrient dense foods are power-packed and give you the most nutrients for the least calories. Based on the nutrients they provide, vegetables are divided into sub-groups: dark green, red/orange, starchy, beans and peas, and other. School meals must offer nutrient dense choices from the dark green vegetable sub-group, like spinach, over the course of the week.⁶

Fun Fact: For a MyPlate serving, 2 cups of raw leafy greens, like spinach, count as 1 cup of vegetables.⁷

Class Activity

Materials Needed:

- School lunch menu

Steps:

1. Spinach contains calcium. Brainstorm a list of all the calcium sources in the diet (dairy products, dark green vegetables, and calcium fortified products like juice, grain products and soy milk).⁸
2. Review the school menu as a class. Identify all of the dark green vegetables. Encourage students to try the dark green veggies when they are featured on the menu. Students can track their progress.
3. Have students plan a weekly menu. The menu should include a variety of vegetables, including dark green choices, and calcium sources. Dark green veggies should be paired with a vitamin C food or an animal iron source to maximize iron absorption by the body.⁵

Fun Fact: Folate is an essential nutrient meaning your body cannot make it. You must eat it in your diet.⁵

Eat

A True “Super Food”

Spinach is low in calories (1 cup raw = 7 calories, ½ cup cooked = 21 calories) but rich in vitamins A and K. It also has folate, beta-carotene, vitamin C, manganese, iron, calcium and fiber. Our bodies can turn beta-carotene into vitamin A. Vitamin A promotes normal vision, supports the growth and health of cells and tissue, protects us from infection and helps regulate the immune system. Vitamin K helps our body to clot blood and make proteins needed for our blood, bones and kidneys. Our body needs folate for blood cell, DNA and genetic development. Vitamin C acts as an antioxidant, protects us from infections, aids in healing, helps form collagen to hold muscles, bones and tissues together, and helps our bodies absorb iron and folate from plants. Manganese helps with forming bone and converting carbohydrate, protein and fat into energy. Iron is needed for brain development, immune function, and hemoglobin, which carries oxygen from our lungs to every body cell. Calcium helps us build strong bones and teeth, our muscles contract and heart beat, and our blood clot if we are bleeding. Soluble fiber helps lower blood cholesterol. Insoluble fiber aids digestion.^{1,4,5,8}

Fun Fact: Iron comes in two forms—heme (from animal sources) and nonheme (from plant sources). Spinach has oxalic acid which can inhibit iron absorption. Eating iron from meat, fish or poultry or a vitamin C rich food with spinach can help (chicken or berries on a spinach salad).⁵

Find

For more spinach info and resources, visit:

1. Nebraska Extension, <http://lancaster.unl.edu/nep/fruitveggie.html>
2. Agricultural Marketing Resource Center, www.agmrc.org
3. North Carolina State Extension, www.ces.ncsu.edu
4. University of Arizona, <http://cals.arizona.edu>
5. Academy of Nutrition and Dietetics, www.eatright.org
6. U.S. Department of Agriculture, Food and Nutrition Service, www.fns.usda.gov
7. Choose MyPlate, www.choosemyplate.gov
8. Leafy Greens Council, www.leafy-greens.org